Nyhamna is selected as the land facility for the Ormen Lange gas.

Start up of development offshore and onshore - the biggest ever industry project in Norwegian history.

West Navigator starts drilling the world’s largest gas wells.

Shell takes over as operator of Ormen Lange. First gas.

PHASE 2 – ORMEN LANGE IN OPERATION

First full year of operation. More wells are drilled. Tuning of the facility optimises production. First hot tap and x-mas tree installation from vessel instead of rig.

A fourth well template is installed north on the field. Start-up of subsea compression test pilot.

PHASE 3 – FURTHER DEVELOPMENT AND EXPANSION OF NYHAMNA

Start of the Nyhamna expansion project. Further development of Ormen Lange includes drilling of more wells, exploration of near field opportunities and seismic surveys.
IMPORTANT FOR EUROPE.

Ormen Lange exports natural gas to Europe, and has covered about 20 per cent of the UK’s total gas consumption since 2009. Stable and reliable gas supply from Norway is important for EU countries that want improved utilisation of nearby resources - thereby reducing their dependency on gas import from outside Europe.

When the expansion project at Nyhamna is completed, the facility will be able to deliver gas equivalent to the consumption of 22 million homes in the UK and continental Europe.
THE GAS IS PRODUCED FROM WELL TEMPLATES LOCATED BETWEEN 850 TO 950 METRES BELOW THE SURFACE OF THE SEA, AND IS PROCESSED AT THE ONSHORE FACILITY AT NYHAMNA, A WHOPPING 120 KILOMETRES FROM THE FIELD. THE GAS FROM ORMEN LANGE IS EXPORTED TO THE UK THROUGH LANGELED, ONE OF THE WORLD’S LONGEST SUBSEA PIPELINES.

A) NYHAMNA
Processing of the gas from the Ormen Lange field. Export of gas to the UK through Langeled.

B) STOREGGA
The pipes run across the steep rock slide edge at Storegga.

C) THE PIPELINES
The gas is transported through pipes from the reservoir in the Norwegian Sea to the onshore facility at Nyhamna.

D) WELL TEMPLATES
Wells are drilled through well templates located at a depth of almost a thousand metres.

E) WELLS
Each well template has room for eight wells.

F) THE RESERVOIR
The reservoir covers an area of approx. 350 km² and lies approx. 3 000 metres below the surface of the sea.
1) LANDFALL
Connects the onshore facility with the offshore installations. In addition to Polarled, there are two pipes from the Ormen Lange field transporting gas and condensate, two umbilicals that control the wells and two pipes that transport antifreeze to the well templates.

2) SLUG CATCHER
Main gas and liquids separator. The gas is lighter than air, and will rise in the vertical pipes at the top. Fluids, consisting of condensate, water and antifreeze are collected at the bottom of the system.

3) TURBO EXPANDER AND DRYING TOWER
Dries the gas by removing last bits of water and condensate. The drying tower removes the water using TEG. The turbo expander cools the gas so that the condensate separates from the gas.

4) COMPRESSOR
In order to be transported to the UK, the gas must have a pressure of 230 bar. From here, the gas is returned to the landfall and out through Langeled.

5) MAIN SEPARATOR
This is where the liquid from the field goes. As water is heavier than oil, the water will go to item 7, while the condensate goes to item 8. The antifreeze goes to item 6.

6) ANTIFREEZE FACILITY
The tanks contain approx. 30 million litres of antifreeze. Antifreeze is added at the well templates in order to prevent the water mentioned in item 5 from freezing to ice. The antifreeze is recycled.

7) TREATMENT PLANT
Because gas is formed in a watery environment, there is some water at the field. This water is treated before it is released. A biochemical treatment plant is installed at Nyhamna. Special bacteria are cultivated and they “eat” the remaining hydrocarbons and entirely clear the water.

8) Caverns
What we can see from the surface, are shafts that give access to the caverns. Here the condensate is stored directly in the rock. This is possible because there is an over pressure of water around the caverns. The water ensures that the condensate is completely contained.

9) EXPORT QUAY
The condensate is exported to refineries via tanker vessels. Condensate is a very light and completely lustrous oil. It can be used for fuel and in petrochemical industries, such as plastics.

10) FLARE
The flare is 65 metres tall and the facility’s safety valve. The rock-clad area surrounding it is the safety zone.

11) TEST BASIN
Test basin for a full-scale compression train, as well as a process module which can simulate the conditions on the seabed.

12) CONTROL ROOM AND ADMINISTRATION
The entire process is controlled and monitored from the control room in the administration building. The building also houses a laboratory, a training simulator, a workshop and an emergency response center.

A) POLARLED
Polarled transports gas from the Norwegian Sea to Nyhamna. Initially, this includes gas from the Statoil-operated Aasta Hansteen field, and in the longer term other fields can also tie in to the facility at Nyhamna through Polarled.

B) ONSHORE COMPRESSION
Two compressors from the Dru attractive, thus contributing to increased recovery of gas from Ormen Lange.

C) SUBSTATION
Power supply for the onshore compressors.

D) EXPORT COMPRESSOR
A fourth compressor increases the export capacity from 70 to 86 million standard cubic metres per day. This will exploit the maximum capacity of Langeled.

E) TEMPORARY PROJECT AREA
During the expansion of Nyhamna, the project organisation has its offices, canteens, and goods reception here.

F) TRAINING FACILITY
All who work at the facility must undergo compulsory safety training. In addition, discipline-specific courses are offered. The centre specialises in training for tasks performed at Nyhamna.

G) CAMP HOTEL
The size of the camp hotel is adapted to the level of activities. With more than 1500 rooms at capacity, it is the largest hotel in Norway.

NYHAMNA EXPANSION
THE ONSHORE FACILITY AT NYHAMNA IS EXPANDED IN ORDER TO RECEIVE GAS FROM OTHER FIELDS.

H) SUBSTATION
Power supply for the onshore compressors.

I) COMPRESSOR
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NYHAMNA IS EXPANDED WITH 51 NEW MODULES

The foundation work started in 2013, and requires 40,000 cubic metres of concrete, 5000 tonnes of reinforcement bars, 30,000 square meters of formwork, 6,000 metres of cable culverts, 220,000 cubic metres of excavation, and 2500 metre of steel-core piles.

In addition to the foundations, 51 new modules will be installed. These are constructed and assembled at Stord, Verdal, in Poland, China and the UK. The modules arrive by ship, and are placed at prepared locations in the facility.

At its peak, more than 4,000 people across the world will be involved in the project. Step by step, the expansion modules are assembled - this while normal operations, supplying 13 million Britons continues.

Substantial capacity is needed to handle the personnel peak in 2015, and the number of beds in the camp hotel is therefore expanded to 1500.
Until Polarled starts operating, Nyhamna has only processed and exported gas from Ormen Lange. The gas is exported to the UK through Langeled, one of the world’s longest subsea pipelines. The export pipeline has a capacity of 84 million cubic metres of gas per day, and the facility is designed to process 70 million cubic metres.

The ongoing development at Nyhamna will utilise the available capacity in the export pipeline, and Polarled will enable more fields to tie in to Nyhamna. The first field will be Statoil’s Aasta Hansteen gas field west of Bodø, but efforts are being made to accommodate future fields to tie in to Nyhamna through Polarled.

Gassco will be the operator when the facility starts to process gas from multiple licences. Shell will operate the facility on behalf of Gassco, and still be the operator of Ormen Lange.
POLARLED PARTNERS:
Statoil, Petoro, OMV, Shell, TOTAL, RWE Dea, Edison ConocoPhillips, Maersk Oil, GDF SUEZ, Wintershall

ORMEN LANGE PARTNERS:
Shell, Petoro, Statoil, DONG, ExxonMobil